PUBLIC HEALTH REPORTS.

VOL. XXV. APRIL 15, 1910. No. 15.

A NOTE ON SQUIRREL FLEAS AS PLAGUE CARRIERS.

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From squirrel to guinea pig.—A California ground squirrel (*Citellus beecheyi*) after having been freed of fleas was inoculated with a culture of *B. pestis* that had been carried for a long time on artificial media. On the fifth day after the inoculation, 89 squirrel fleas (*Ceratophyllus acutus Baker*) were put in the cage with the animal. The squirrel died 4 days later. A few hours after the death of the squirrel 4 guinea pigs were placed in the cage, the body of the squirrel being permitted to remain with them for about half an hour. The body of the squirrel was then removed and subjected to a post-mortem examination and the lesions of subacute plague were found. One of the guinea pigs died on the eighth day and another on the twelfth day. Each animal exhibited the lesions of subacute plague. The remaining guinea pigs were chloroformed on the sixteenth day and found entirely healthy.

In this experiment the possibility of contagion from the contamination of the cage and from the body of the squirrel could not be eliminated; however, the mass of evidence against such modes of infection is so great as to leave practically no doubt that the transmission was by means of the fleas introduced.

From squirrel to squirrel.—A ground squirrel was inoculated with a culture of the plague bacillus derived from a case of plague in man (squirrel origin). Forty-eight hours after the inoculation 100 fleas (*C. acutus*) were placed in the cage with the squirrel. This squirrel died upon the fifth day, and at the autopsy showed the usual lesions of acute plague. Twenty-seven fleas were recovered from the body of the rodent. Two of the fleas were crushed and each showed in smears an abundance of pest-like bacilli. The remaining 25 fleas were placed in a clean cage with a healthy squirrel. This second squirrel died on the tenth day, presenting at autopsy the characteristic lesions of subacute plague. A culture of *B. pestis* was isolated from the liver. This experiment proves conclusively that squirrel fleas may carry plague infection from one squirrel to another, but whether this is the usual mode of conveyance in nature remains to be proven. The fleas used in these experiments were bred on healthy squirrels in the laboratory and had never had an opportunity to become contaminated prior to the experiment.

I am indebted to Mr. M. B. Mitzmain, B. S., laboratory assistant, for the breeding and identification of these fleas and for valuable assistance in conducting the experiments.